

# Notice of Allowability

Application No.

09/954,721

Examiner

Jerome Grant II

Applicant(s)

OLSSON ET AL.

Art Unit

2626

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 109-131.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 12/02;3/03;6/04;9/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

J. Grant II

### Reasons for Allowance

Claims 109 – 120 are allowed for the reason the prior art does not teach or suggest in claimed combination, "... determining two intercepts of the polygonal edge with the edges of the area.. determining an orientation of the polygon edge and applying one of the pre-calculated sub-pixel bar maps corresponding to at least one of the two intercepts and the orientation.... Applying one of the pre-calculated sub-pixel area maps corresponding to at least one of the two intercepts and the orientation. "

Claim 121 is allowed in view of "... determining two intercepts of the polygon edge and an extension of the polygon edge with the edges of the rectangular area.. determining an orientation of the polygon edge and applying one of the pre-calculated sub-pixel bar maps corresponding to at least one of the two intercepts and the orientation...applying one of the pre-calculated sub-pixel area maps corresponding to at least one of the two intercepts and the orientation."

Claim 122 is allowed in view of determining two intercepts of the polygon edge with the edges of the rectangular area and applying one of pre-calculated sub-pixel bar maps based on the two intercepts... applying one of pre-calculated sub-pixel area maps based on the two intercepts.

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Claims 123-131 are allowed for the reason the prior art does not teach determining two intercepts of the polygon edge and an extension of the polygon edge with the edges of the rectangular area of other edges not part of the intercepted edges of said two intercepts and applying one of the pre-calculated sub-pixel area maps corresponding to the two intercepts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Grant II whose telephone number is 571-272-7463. The examiner can normally be reached on Mon. – Thurs. from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles, can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J. Grant II

JEROME GRANT  
PRIMARY EXAMINER

### **Examiner's Amendment**

#### **In the claims:**

The following is a list of claims currently pending in this application and their current status. This listing of claims will replace all prior versions and listings of claims in the application:

1-108. (Cancelled by Examiner's Amendment)

109. (Examiner's Amendment) A method of defining an edge of a polygon within an area having sides, the area being subdivided into sub-pixels, including:  
providing a plurality of pre-calculated sub-pixel area maps corresponding to potential intercepts and orientations of the polygon edge with the sides of the area;

wherein the potential intercepts are limited to discrete positions along edges of the area;

wherein the potential orientations are limited to orientations that connect the discrete positions;

determining two intercepts of the polygon edge with the edges of the area;

determining an orientation of the polygon edge; and

applying one of the pre-calculated sub-pixel area maps corresponding to at least one of the two intercepts and the orientation.

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110. (Examiner's Amendment) The method of claim 109, further including super-sampling one or more sets of sub-pixels to which one or more of the pre-calculated sub-pixel area maps have been applied.

111. (Original) The method of claim 109, wherein the first area is subdivided by no more than 256 sub-pixels and the discrete positions are limited to no more than 65 positions per sub-pixel.

112. (Original) The method of claim 109, wherein the area is subdivided by no more than 64 sub-pixels and the discrete positions are limited to no more than 33 positions per sub-pixel.

113. (Original) The method of claim 109, wherein the area is subdivided into no more than 32 by 16 sub-pixels and there are 17 discrete positions along an edge of the sub-pixel.

114. (Original) The method of claim 109, wherein the area is subdivided into no more than 16 by 8 sub-pixels and there are 9 discrete positions along an edge of the sub-pixel.

115. (Examiner's Amendment) The method of claim 109, wherein the pre-calculated sub-pixel area maps are limited to a set of the potential orientations forming a range of approximately 45 degrees and the pre-calculated sub-pixel area maps are transformed to cover a range of approximately 180 degrees.

116. (Examiner's Amendment) The method of claim 109, wherein the pre-calculated sub-pixel area maps include a combination of the potential orientations forming a range of approximately 45 degrees from one of the

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potential intercepts across a range of the discrete positions along an edge of one pixel.

117. (Examiner's Amendment) The method of claim 109, wherein the pre-calculated sub-pixel area maps are limited to a set of the potential orientations forming a range of approximately 45 degrees from one of the potential intercepts across a range of the discrete positions along an edge of one pixel.

118. (Examiner's Amendment) The method of claim 117, wherein the pre-calculated sub-pixel area maps are transformed to cover a range of the potential orientations of approximately 180 degrees.

119. (Original) The method of claim 109, wherein the first and second sides are opposing.

120. (Original) The method of claim 109, wherein the first and second sides are adjacent.

121. (Examiner's Amendment) A method of defining an edge of a polygon within an area having sides, the area being subdivided into sub-pixels, including:

- providing a plurality of pre-calculated sub-pixel area maps corresponding to potential intercepts and orientations of the polygon edge with the area;
- wherein the potential intercepts are limited to discrete positions along the sides of the area;
- wherein the potential orientations are limited to orientations that connect the discrete positions;
- determining two intercepts of the polygon edge and an extension of the polygon edge with the edges of the rectangular area;
- determining an orientation of the polygon edge; and
- applying one of the pre-calculated sub-pixel area maps corresponding to at least one of the two intercepts and the orientation.

122. (Examiner's Amendment) A method of defining an edge of a polygon within a rectangular area, the rectangular area being subdivided into sub-pixels, including:

- providing a plurality pre-calculated sub-pixel area maps corresponding to potential intercepts of the polygon edge with the rectangular area;
- wherein the potential intercepts are limited to discrete positions along edges of the rectangular area;
- determining two intercepts of the polygon edge with the edges of the rectangular area; and
- applying one of pre-calculated sub-pixel area maps based on the two intercepts.

123. (Examiner's Amendment) A method of defining an edge of a polygon within a rectangular area, the rectangular area being subdivided into sub-pixels, including:

providing a plurality of pre-calculated sub-pixel area maps corresponding to potential intercepts of the polygon edge with the rectangular area;

wherein the potential intercepts are limited to discrete positions along edges of the rectangular area;

determining two intercepts of the polygon edge and an extension of the polygon edge with the edges of the rectangular area; and

applying one of the pre-calculated sub-pixel area maps corresponding to the two intercepts.

124. (Original) The method of claim 123, further including super-sampling one or more sets of sub-pixels to which one or more of the pre-calculated sub-pixel area maps have been applied.

125. (Original) The method of claim 123, wherein two opposing edges of the rectangular area are subdivided by no more than 64 sub-pixels and the discrete positions are limited to no more than 33 positions per sub-pixel.

126. (Original) The method of claim 123, wherein the rectangular area is subdivided into 32 by 16 sub-pixels and there are 17 discrete positions from along one edge of the sub-pixel.

127. (Original) The method of claim 123, wherein the rectangular area is subdivided into 16 by 8 sub-pixels and there are 9 discrete positions from along one edge of the sub-pixel.



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128. (Examiner's Amendment) The method of claim 123, wherein the pre-calculated sub-pixel area maps are limited to a set of potential orientations between the discrete positions forming a range of approximately 45 degrees and the pre-calculated sub-pixel area maps are translated to cover a range of approximately 180 degrees.

129. (Examiner's Amendment) The method of claim 123, wherein the pre-calculated sub-pixel area maps include a combination of potential orientations between the discrete positions forming a range of approximately 45 degrees with one of the potential intercepts across a range of the discrete positions along one edge of one sub-pixel.

130. (Examiner's Amendment) The method of claim 123, wherein the pre-calculated sub-pixel area maps are limited to a combination of potential orientations between the discrete positions forming a range of approximately 45 degrees with one of the potential intercepts across a range of the discrete positions along one edge of one sub-pixel.

131. (Examiner's Amendment) The method of claim 130, wherein the pre-calculated sub-pixel area maps are translated to cover a range of the potential orientations of approximately 180 degrees.

132-166. (Cancelled by Examiner's Amendment)

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